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U.S. Nuclear Policy in the 21st Century

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Conclusions

- Nuclear weapons will continue indefinitely to play an indispensable role in U.S. national security policy: as a hedge against uncertainties, to deter potential aggressors who are both more diverse and less predictable than in the past, and to allow the United States to construct a more stable security environment. Recent nuclear tests by India and Pakistan make it clear that nuclear weapons remain part of the security setting. The aggressive pursuit of nuclear, biological, and chemical weapons by states such as Iran and North Korea underscores the role of deterrence as a central component of U.S. security strategy.
- The United States requires a credible nuclear deterrent posture, broadly defined to include forces-in-being; capabilities for weapon system design and production; and the ability to assure the safety and reliable performance of the nuclear stockpile—a fundamental challenge in the absence of underground testing. Because this posture must be both adaptable and responsive to new threats, the national deterrent infrastructure must be treated as a strategic resource. The posture must also incorporate a greater role for defenses in future deterrence calculations. All of this requires trained and motivated people, as well as new ways of thinking and considerable agility and foresightedness on the part of U.S. leaders.
- A nuclear force that is not backed by the perceived ability and willingness to maintain and, when necessary, reconstitute important elements will increasingly be seen as hollow. The decisions and actions that the United States takes concerning the total force posture in the years ahead will influence decisively how both allies and adversaries perceive the credibility of the U.S. deterrent. In turn, this holds important implications for the overall capacity of the United States to shape the security setting at the outset of the new millennium and to provide for the nation's defense in a world of change and turbulence.

Setting a New Paradigm

Recognizing the need for a fresh, long-term look at national security strategy and requirements, and specifically at U.S. nuclear policy in the 21st Century, the Center for Counterproliferation Research at the National Defense University and the Center for Global Security Research at Lawrence Livermore National Laboratory brought together a group of experts with extensive experience in security policy and military affairs.

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The participants examined the broad trends in the international environment and considered how the United States could both shape and respond to them. A forward-looking paradigm for the nuclear dimension of U.S. security policy emerged that builds on the lessons of the past while addressing the opportunities and challenges of the future. The paradigm is based on five elements:

1. Sweeping positive changes have occurred. The bilateral "nuclear balance" that occupied center stage in the past no longer dominates the strategic calculations of the United States or Russia. Yet, there remains a continuing need for deterrence and for the retention of nuclear weapons as an essential component of U.S. national security strategy.
2. Nuclear weapons will remain part of the global security setting. The knowledge to build them will continue to exist; they cannot be disinvited. Even if the United States were to divest itself of its nuclear arsenal, other nations would be unlikely to follow suit. To the contrary, some states would gain incentives to retain or acquire nuclear weapons against a conventionally superior but nuclear-free United States. If nuclear weapons were somehow eliminated, a serious deterioration of the international environment could engender strong incentives for nuclear rearmament. A rapid and competitive race to rebuild nuclear arsenals could increase prospects for a devastating war.
3. In the changing security setting, the nuclear weapons infrastructure—broadly defined to include both the operational forces and the development and production capabilities that can bring new forces into being when needed—takes on a heightened strategic prominence. This will require a greater attention to adaptation and reconstitution.
4. Increased engagement with Russia and China is required to foster a broader set of relationships and to strengthen the stability of nuclear postures. The dynamics and substantive focus of these relationships should be different from the past. As our relationship with Russia matures, we should be able to approach security concerns more directly and find common ground to further strengthen our joint and separate but not conflicting interests. One approach that could benefit both states is consideration of sharing early warning data and technologies—improving their warning network and improving our missile defense capabilities. At a minimum, we should divorce ourselves from the past policy of mutual vulnerability, a policy built on distrust and Cold War insecurities that continues to inhibit normal relations. Both states must look to the future.
5. The paradigm recognizes that the fundamentals of deterrence have not changed: effective deterrence will continue to depend on both real capabilities and the perception of a national will to respond to aggression. The participants concluded that they could place no credence in virtual deterrence. At the same time, there is an opportunity and need for a more balanced relationship among the three traditional elements of deterrence—retaliation, denial, and dissuasion.

Judgments

Turning to the principal judgments of the study, the project participants reaffirmed that certain basics are enduring. Yet, the study contains much new thinking about how to pursue national security objectives, as well as new ideas on issues as diverse as the nuclear weapons infrastructure, stockpile maintenance in the absence of testing, and arms control.

Nuclear weapons will remain indispensable to U.S. security. The threat of war between the United States and Russia has been greatly diminished. The motives and capabilities of our former opponent have changed fundamentally. The results of these changes are apparent in the radical restructuring of

U.S. conventional and nuclear forces. Nevertheless, the world remains uncertain and dangerous. In this context, U.S. nuclear weapons serve to protect against an uncertain future with Russia and China, states that continue to value nuclear weapons for both political status and, in Russia's case, to overcome what it sees as a growing conventional inferiority. In fact, nuclear weapons appear to play a growing role in the security policy of Russia, both in declaratory statements and defense planning. The retention of between 10,000 and 15,000 (and perhaps many more) theater nuclear weapons, the recent deployment of the SS-27 ICBM, and a continuing investment in its overall nuclear infrastructure, especially hardened command and control facilities and the extensive nuclear weapons production complex, are expressions of the importance assigned to these weapons by Russian leaders.

The new circumstances associated with the spread of chemical and biological weapons, as recognized in national guidance, have expanded the role of nuclear weapons to deter such use. The group concluded that U.S. nuclear weapons do play an important role in deterring the use of NBC weapons against U.S. forces and allies by regional and rogue states. States such as North Korea and Iran do not seek nuclear weapons because the United States has nuclear weapons. Rather, the motives for acquiring weapons of mass destruction are numerous and overlapping, ranging from status and regime survival, to use as tools of aggression against neighbors, to using them to overcome the U.S. conventional superiority.

Finally, nuclear weapons have also formed an indispensable basis for achieving stability through extended deterrence and remain important to assure friends and allies that their security is linked as fully as possible to that of our own. As with the United States, the overall threat to most allies has declined. Yet, from Japan and Korea in the Far East, to Germany and other NATO allies in Europe, U.S. nuclear weapons continue to reassure allies, provide stability, promote peace and, by reducing incentives (or eliminating the need) for others to acquire nuclear weapons, contribute to nonproliferation goals.

The U.S. nuclear deterrent force must be structured to counter existing and emerging threats. The U.S. nuclear posture today can be different from the past when the United States faced a much larger and more immediate threat. However, certain attributes and capabilities of the nuclear deterrent must be enduring if the United States is to be perceived as having the capability and will to meet the security challenges of the future.

To achieve a stable deterrent, experience has demonstrated that the nuclear force must possess certain fundamental characteristics: the force must be safe, secure and reliable; it must be responsive to political control and effective against the potential targets contemplated in the strategy; and it must be survivable so that no adversary perceives vulnerabilities to exploit. To meet these requirements, the United States should retain the TRIAD of bombers, land-based ICBMs and sea-based SLBMs. Elimination of any one leg would weaken deterrence. The TRIAD remains valuable for the same reasons it always has: the synergy of its elements provides flexibility, enhances survivability, and complicates defenses, thereby strengthening deterrence. Diverse basing and penetration modes also provide a hedge against a technological breakthrough by an adversary or the discovery of significant material problems with any one system.

While the participants reached consensus on almost all of the operational assessments, including needed improvements to command and control capabilities and greater adaptability in planning, there was a difference expressed on theater nuclear issues. Although all supported the principle of extended deterrence, some questioned the need for shorter-range delivery systems insofar as the TRIAD could meet all targeting requirements. Most, however, felt strongly that to support regional deterrence the United States must retain, now and in the future, shorter-range systems, including dual-capable aircraft and sea-launched, land-attack missiles.

The participants also emphasized the need for high level attention to future organizational and readiness issues, broadly defined. With the end of the Cold War and the curtailment or cancellation of virtually all modernization programs, nuclear force matters no longer demand the continuous involvement of senior leaders. Current reorganization schemes within the Department of Defense leave it unclear which, if any, organization is the focal point for nuclear issues, and this lack of focus will be detrimental to readiness.

Continued downward trends in emphasis on U.S. nuclear weapons are forecast to result in critical shortfalls in the areas of planning, weapons technical issues, command and control, and operational test and evaluation. In addition, career military personnel today generally view the nuclear career fields as being out of the mainstream and having uncertain futures, posing significant obstacles to recruiting and retaining the necessary nuclear expertise. While the DoD and the Services are cognizant of these factors, it is imperative that senior-level attention be given to these issues today to avoid critical deficiencies in nuclear expertise in the future.

A confluence of factors is leading toward a greater role for denial capabilities in the U.S. deterrent strategy. Included in the concept of denial are diverse capabilities such as active and passive defenses, as well as counterforce actions that deprive the enemy the benefits of his weapons. Given the growing ballistic and cruise missile threat, coupled with the proliferation of nuclear, chemical and biological weapons, missile defenses are at the core of denial. The participants concluded that, in addition to defending U.S. forces and allies, the United States requires an effective missile defense against the emerging threat from rogue states armed with long-range missiles. In this context, the United States must pursue defenses of U.S. cities and population with the ability to protect against at least several dozen reentry vehicles.

On the technology side, the report concludes that it will be feasible to field effective systems, although considerable testing remains to be conducted before any particular system can be designated as ready. On the policy side, the project participants emphasized the need to move away from a policy that accepts the total vulnerability of our society to missile attack. Emphasizing mutual vulnerability has a corrosive effect in political dealings with Russia and impedes better, more normal relations. Moreover, avoiding mutual vulnerability relationships with other states and developing and deploying effective defenses against such smaller-scale attacks would enhance deterrence.

The U.S. nuclear deterrent infrastructure must be capable of maintaining current forces, and must be sufficiently adaptive to provide new capabilities when required. This judgment is based on an in-depth assessment of the weapons infrastructure which plays an essential role in deterrence. A strong, flexible and responsive infrastructure is essential to make clear to potential adversaries that the United States could respond to any emerging threat, even with new forces if necessary, and more rapidly than the threat could be mounted.

One major problem identified in the report is the existing piecemeal approach to planning and funding for the deterrent infrastructure. The DoD lacks an overall roadmap to set priorities and guide actions to ensure confidence in the future of the infrastructure, up to and beyond the lifetime of currently deployed systems. The participants strongly recommend creating such a roadmap.

Retaining the safety, reliability, security, and performance of the nuclear weapons stockpile in the absence of underground nuclear testing is the highest-risk component of the U.S. strategy for sustaining deterrence. Critical factors affecting the stockpile include the known and unknown effects of aging, diminished diversity in weapons types, difficulties in maintaining expertise, and, most important,

the prohibition on underground testing. The group concluded that the Stockpile Stewardship Program is the minimum effort required, and itself remains a high-risk endeavor as a result of an inability to validate the conclusions by nuclear testing and the need for sustained funding. Moreover, unlike that of Russia, the U.S. manufacturing complex can no longer support the serial production of nuclear weapons. As a result, there is no immediate hedge against the failure of an individual type. This risk can be mitigated by retaining selected types withdrawn from the active stockpile as a form of "virtual manufacturing."

Recommendations

- People are the *sine qua non* for the maintenance of a safe, secure, and effective deterrent force. If present trends continue, it will become increasingly difficult to attract and retain the people needed to build, operate, and maintain the nuclear deterrent forces. Therefore, the Departments of Defense and Energy—in cooperation with the national laboratories, relevant industries, and universities—should develop a program to ensure that personnel with critical skills in nuclear weapons planning, operations, design, production, and maintenance are retained, and a suitable successor generation is developed before these key skills atrophy.
- The Department of Defense should prepare a long-term plan encompassing specific needs for future U.S. nuclear weapons, delivery systems, and the supporting infrastructure. A senior official within the DoD Acquisition structure should be given overall responsibility for implementing such a plan, and for coordinating nuclear matters within DoD and with the Department of Energy as well as other appropriate agencies.
- Missile defenses will be of growing importance in the years ahead. The United States must be able to deploy effective defenses in regions with important interests and allies, as well as a national missile defense against the growing threat to the United States itself. Increasingly capable missile defenses can and should be deployed as a central component of deterrence. The United States should engage Russia on cooperative efforts to address mutual interests in this area, including early warning, while avoiding the pitfalls of destabilizing proposals such as "de-alerting."
- The U.S.-Russian arms control approach needs to be transformed. That approach, which focuses primarily on mechanically reducing the number of deployed strategic weapons, conceals important imbalances in total nuclear postures. A more sound approach is needed, one that recognizes that different nuclear weapon states require different deterrent forces. As part of this transformation, the policy of the United States should recognize that holding our society totally vulnerable to nuclear attack is not in the security interests of the United States or Russia, but rather inhibits the positive evolution of our long-term relationship.
- Retaining the safety and reliability of the nuclear weapons stockpile in the absence of underground testing is the highest-risk component of the U.S. strategy for sustaining deterrence. The Stockpile Stewardship Program is the minimum effort required and itself remains a high-risk endeavor. To hedge against this risk, and the erosion of the U.S. weapons manufacturing complex, the United States must be prepared to resume underground testing if necessary and should retain selected weapons types withdrawn from the active stockpile.

A more detailed treatment of the key judgments discussed in this paper is contained in the recently released Executive Report of the study, U.S. Nuclear Policy in the 21st Century: A Fresh Look at National Strategy and Requirements (available on the internet at <http://www.ndu.edu>). A final report will be published this fall. The views expressed are those of the study participants. These views may not be shared by all participants and do not necessarily represent the views of the Institute for National Strategic Studies, National Defense University, the Department of Defense, or organizations with which the participants may be affiliated. Ambassador Robert Joseph

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